

NEWS LETTER

BUREAU OF PLANT QUARANTINE

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(The contents of this number, unless specifically stated otherwise,
cover the month of December only)

ADMINISTRATIVE

ENFORCEMENT OF THREE QUARANTINES MERGED

Due to the overlapping of the areas infested by Japanese beetle and gypsy moth, it was found advisable in the interests of economy to merge the enforcement work on the two quarantines. With the spread of the Japanese beetle in the New England States and the extension of the quarantine in that area, the Bureau was in the position of having two sets of inspectors in the same area while all the work of inspection and certification of products could readily be handled by one unit. The enforcement of the satin moth quarantine which is operative in the same territory was also combined with the other two quarantines. This work will be under the field supervision of L. H. Worthley. The work on eradication of the gypsy moth, including the extensive eradication program in northeastern United States now in progress and the control measures in the barrier zone, will be in charge of A. F. Burgess. This change became operative January 1.

TECHNOLOGICAL DIVISION

Work is proceeding rapidly on the repairs and alterations of fumigation equipment on the Mexican border. Work is under way on the Brownsville fumigation house, which was so badly damaged by the hurricane last September that it became necessary to reconstruct it. The house which is being built has a capacity of three cars and can, by means of a partition door, be divided into a one- and a two-car compartment. Sliding steel doors are installed at each end of the house and suitable storage space and facilities for vacuum fumigation are installed in the new plant.

At the Eagle Pass fumigation house the roof is being replaced, and a system for fumigation with volatilized hydrocyanic acid is being installed, in addition to repainting the house and minor repairs. At Laredo, new steel doors are being installed in place of the wooden doors which are now in place. A new locking device for sealing the doors is also being installed. The fumigation chambers are being plastered and painted. It is planned to install new end doors and a system for volatilizing the hydrocyanic acid for fumigation at El Paso.

All the reservations are being fenced with woven wire fencing for the protection of the property and the public.

FOREIGN PLANT QUARANTINES

RECENT ENTOMOLOGICAL INTERCEPTIONS OF INTEREST

Mediterranean fruit fly from Spain.--A larva of Ceratitis capitata Wied. was intercepted at Savannah, Ga., in a malaga grape in stores from Spain.

Fruit fly taken in Puerto Rico.--An adult of Anastrepha suspensa Loew (Trypetidae) was collected on a leaf of tropical almond (Terminalia catappa) in the field at Arecibo, P.R.

Nut fruit tortrix from Spain.--A living larva of Laspeyresia splendana Hbn. (Olethreutidae) was taken at New York in a chestnut in cargo from Spain.

Weevil in Scotch broom seed.--An adult of Sitona lineata Linn. (Curculionidae) was intercepted at Philadelphia in a seed of Scotch broom (Cytisus scoparius) in the mail from England.

Scale insect on poinsettia.--Lepidosaphes alba (C'ell.) was taken at Miami, Fla., on poinsettia (Euphorbia pulcherrima) in baggage from Nassau, Bahamas. This coccid has been intercepted previously on cassava from Belgian Congo, Brazil, Java, and the West Indies. It is recorded from Florida.

Lepidopter on in leek leaves.--Living larvae and cocoons of Acrolepia assectella Zeller (Plutellidae) were intercepted at Philadelphia in the leaves of leek (Allium porrum) in stores from the Netherlands. Reported as causing considerable damage to garlic, and particularly to leeks, in the neighborhood of Montpellier, France. Also recorded as a pest of onions in Russia.

Logs from East Africa infested.--Brachymerus rubidus Murray (Nitidulidae) and Colobicus marginatus Latr. (Colydiidae) were taken at Baltimore, Md., under the bark of black walnut logs in cargo from East Africa.

Cricket from the Orient.--The Japanese singing cricket (Homoeogrillus japonicus Haen) was taken at San Francisco as a caged pet in baggage from Japan.

It has also been intercepted at the same port in baggage from China. This gryllid is not recorded from the continental United States.

Weevil from Guatemala.--An adult of Catolethrus longulus Boh. (Curculionidae) was intercepted at Baltimore, Md., on banana debris in cargo from Guatemala.

Pink bollworm from the West Indies.--Seven living larvae of Pectinophora gossypiella Saund. were intercepted at Boston in four cotton bolls in the mail from Antigua, Lesser Antilles.

New locality record.--Living thrips were intercepted at Washington, D.C., on Aster spp. and varieties in the mail from the Netherlands. J. R. Watson, of Gainesville, Fla, reports as follows: "Thrips nigripilosus form brachyptera Uz., a species not known to occur in this country. It never has been reported from Holland either, but from practically all the countries around there."

Bark beetle from England.--Adults of Dryocoetes villosus Fabr. (Scolytidae) were intercepted at New York in brown oak logs in cargo from England.

Termite from the Philippines.--Soldiers and workers of Macrotermes gilvus Hagen were intercepted at San Francisco in seeds of a rubber tree in baggage from Manila, P.I. T. E. Snyder, of the Bureau of Entomology, reports that this is a fungus-growing species which builds subterranean mounds. This white ant, which also attacks sugarcane, is not recorded from the continental United States. Dr. Snyder further states that this interception represents an interesting host record.

Whitefly from Tahiti.--Dialeurodes kirkaldyi (Kot.) (Aleyrodidae) was intercepted at Washington, D.C., on a Gardenia tahitensis plant in the express from Tahiti, Society Islands. This species was described in 1907 by Jacob Kotinsky from specimens taken in Hawaii.

RECENT PATHOLOGICAL INTERCEPTIONS OF INTEREST

Wisteria disease.--A disease was intercepted at Seattle on special permit material of Wisteria multijuga praecox from Japan and referred to Miss E. K. Cash who reports as follows: "Mycosphaerella sp. Spores larger than Sphaerella wistariae Cke. and S. wistaricola Turcom." Wisterias have long been one of the most beautiful flowering vines grown by the artistic gardeners of Japan. It is quite possible that their plants have accumulated diseases to which the Japanese forms are highly resistant but which might be destructive to some of the strains from other parts of the world. Hence it is important that propagating material of these plants be inspected with extreme care and even the most insignificant looking evidences of disease removed, as was done in this case.

Colletotrichum gloeosporioides on beans.--Some specimens of lima bean scab (Elsinoe canavaliae) from Cuba sent in by New York inspectors were found to be largely overgrown by Colletotrichum gloeosporioides when they reached Washington. While this fungus attacks a wide range of plants and is frequently intercepted, this is the first interception on lima beans since 1925.

Rhizoctonia on tomato.--The shipment of fresh vegetables from Mexico for

the winter trade has been under way for several weeks. One of the earlier interceptions on tomato was soil rot (Rhizoctonia solani), collected at Nogales on December 9. While this disease is rather destructive some years and has probably been intercepted on previous occasions, this was the first material received in condition to determine with any degree of certainty.

New host and locality for nema.--Our first interception record of Neotylenchus abulbosus from Spain is based on a collection of infested chestnuts found in baggage from Spain at Key West on November 8. According to Dr. Steiner, chestnut is a new host for this parasite.

Palm seed rejected.--A mail shipment of palm seed from Cuba for growing in Florida was returned to the shipper from the Washington Inspection House when inspection showed the presence of Phomopsis palmicola var. arecae (P. arecae) which is apparently not found in this country. The fungus had penetrated to the interior of the seed in some cases and presumably was responsible for the death of the seed.

Onion smut intercepted.--Although onion smut (Urocystis cepulae) is rather common and widely distributed, it does not appear to have been intercepted until it was found in onions in stores from Germany at Savannah, on December 21.

Nematode interceptions.--Nematode interception determinations for the month included Anguillulina dipsaci in garlic from France at New Orleans and in potatoes from Germany at Houston, Mobile (3), New York, Philadelphia (2), and Savannah, and from Sweden at Baltimore and Mobile; Aphelenchoides parietinus in ginger from China at Buffalo (2), from Japan at Baltimore, in taro from Japan at Baltimore, and in turnip from Sweden at Baltimore; Aphelenchus avenae in tulip from England at Detroit and in turnip from Sweden at Baltimore; and Heterodera marioni in carrot from India at Philadelphia and in Iris laevigata, Yamato Nishiki (new host) from Japan at Seattle.

SOME OF THE INSECTS AND DISEASES INTERCEPTED AT NOGALES, ARIZ.,
IN VEGETABLE SHIPMENTS FROM THE WEST COAST OF MEXICO DURING THE
1932-33 WINTER SEASON.

Gnorimoschema lycopersicella Busck (Gelechiidae) was intercepted 840 times in tomatoes; Gnorimoschema gudmannella Wlsm. (Gelechiidae), twice in bell peppers, once in tomatoes; Heliothis obsoleta Fabr., 629 times in tomatoes, 10 in green peas, 7 in string beans, 4 in bell peppers, 2 in lima beans, 1 in squash; Heliothis virescens Fabr., 56 times in tomatoes; noctuid, 24 times in tomatoes, 3 in peppers; Platynota stultana Wlsm. (Tortricidae), 13 times in peppers; Platynota sp. (Tortricidae), 22 times in peppers, 3 in tomatoes; tortricid, 18 times in peppers, 4 in tomatoes, 1 in eggplant; Laphygma exigua Hbn. (beet armyworm), twice in tomatoes; Phlyctaenia rubigalis Gn. (greenhouse leaf tier), twice in tomatoes; Marmara sp. (Gracilariidae), 3 times in pepper; Loxostege sp. (?) (Pyralidae), twice in squash; Diaphania sp. (Pyralidae), 16 times in squash, 1 in cucumber; curculionid, twice in eggplant; Diabrotica balteata Lec. (Chrysomelidae), once in eggplant; Apion sp. (Curculionidae), twice in lima beans; Etiella zinckenella Tr. (Pyralidae), twice in lima beans; gelechiid, once in bell pepper; Autographa sp. (Noctuidae), once in pepper; Pseudococcus citri (Risso), once on pepper. Prodenia sp. (Noctuidae),

Feltia malefida Guen. (Noctuidae), Phalaenophana sp. (Noctuidae), Exptochiomera minima Guer. (Lygaeidae), Crophius costatus Dist. (Lygaeidae), Antillocoris sp. (Lygaeidae), Dicyphus minimus Uhl. (Miridae), and Laphygma sp. (?) (Noctuidae) were each intercepted once in tomatoes. An adult of Eutolina mima Harv. (Noctuidae) was taken once on a lug of tomatoes.

Alternaria solani was intercepted 33 times on tomatoes, 10 on peppers; Alternaria sp., 70 times on tomatoes, 12 on lima beans, 11 on green peas, 6 on peppers, 2 on eggplant; Macrosporium sp., 34 times on tomatoes, 15 on green peas, 10 on lima beans, 6 on peppers, 1 on string beans, 1 on horse beans; Erysiphe polygoni, 10 times on green peas; Erysiphe sp., 12 times on green peas, 1 on tomato; Oidium sp., 17 times on green peas; Aplanobacter michiganense, 5 times on tomatoes; Bacteriaceae sp., 76 times on tomatoes, 19 on peppers, 9 on lima beans, 6 on string beans, 4 on green peas, 4 on squash, 1 on eggplant, 1 on horse beans; Botrytis sp., 26 times on tomatoes, 10 on lima beans, 7 on green peas, 7 on peppers, 1 on horse beans; Cephalothecium roseum, once on tomato, once on lima beans; Cephalothecium sp., 5 times on tomatoes; Cladosporium fulvum, 16 times on tomatoes, 2 on peppers, 2 on eggplant; Cladosporium sp., 120 times on tomatoes, 31 on lima beans, 20 on green peas, 7 on string beans, 7 on peppers, 5 on eggplant, 1 on squash, 1 on horse beans; Colletotrichum lindemuthianum, 2 times on string beans; Colletotrichum sp., 8 times on tomatoes, 2 on eggplant; Corticium sp., 27 times on tomatoes, 9 on lima beans, 5 on string beans, 3 on peppers, 2 on horse beans, 1 on green peas, 1 on squash; Fusarium sp., 44 times on tomatoes, 30 on lima beans, 7 on peppers, 3 on string beans, 3 on green peas, 1 on eggplant; Oospora sp., 3 times on tomatoes; Phytophthora sp., 90 times on tomatoes, 1 on peppers, 1 on horse beans; Sclerotium sp., once on tomatoes, once on pepper; Uromyces appendiculatus, 6 times on string beans; Uromyces sp., 5 times on lima beans, 1 on horse beans; Bacillus carotovorus, twice on tomatoes; Bacterium phaseoli, 5 times on lima beans, 3 on string beans; Oospora lactis parasitica, Phoma destructiva, and Bacterium vesicatorium, once each on tomatoes.

CERTIFICATION OF FRESH FRUITS AND VEGETABLES FOR EXPORT IN 1933

The function of certifying fresh fruits and vegetables for export, to meet the sanitary requirements of foreign countries, is carried out under a special "Export Certification Act" passed in 1926, and involves a close cooperative relation with the various State inspection authorities as well as the Bureau of Agricultural Economics. The varying demands of different countries for special inspection or certificate procedure in products shipped to them introduce a considerable degree of complexity into what otherwise would seem to be a simple case of examining shipments, and, if they conform to a given standard, issuing a uniform type of certificate.

The demand for inspection and certification of fruits and vegetables and nursery stock for shipment to foreign countries increased to a marked degree during the fiscal year 1933. Five thousand seven hundred and sixty-six shipments, representing 2,464,321 containers, were inspected and certified. This represents an increase of approximately 71 percent in the number of shipments certified during the preceding year, and approximately 210 percent in the number of individual containers.

The more important commodities inspected and certified were: Apples 2,242 shipments, consisting of 1,225,428 boxes, 90,110 barrels, and 39,543 baskets; pears, 1,065 shipments, consisting of 663,592 boxes, 37,644 baskets, and 527 barrels; potatoes, 791 shipments, consisting of 159,058 bags, 8,402 barrels, and 43 crates and baskets; miscellaneous fruits and vegetables, 899 shipments, consisting of 96,406 packages; and nursery stock, including seeds, 292 shipments, consisting of 846 lots.

These certified shipments left from 25 different United States ports, over 80 percent being sent from the six ports of New York, Baltimore, New Orleans, San Francisco, Portland, and Seattle. Of the 53 countries to which these certified products were destined the largest importers were Argentina, Brazil, Venezuela, Cuba, France, Belgium, and Holland. It should be noted that shipments of certified products to a given country may not represent the total exports of our fruits and vegetables to that country since a good deal of these products go abroad without certification.

PUERTO RICO INSPECTOR CONTRIBUTES INSECTS

In the carrying out of Quarantine No. 58, on fruits and vegetables from Puerto Rico, the plan is followed of allowing entry of certain products from the island when these are certified as free from pests by the Federal plant quarantine inspection service stationed there. In order to make this certification as reliable as possible the inspectors keep closely under observation the fields and groves where fruit or vegetables for shipment to the mainland are being grown, on the theory that most of the pests which might be found in the packed product will be detected far more readily in the field.

In the course of this field inspection a good many insects are encountered, not all of which are of injurious type. All of them, however, are turned in through the usual interception channels for identification.

Reporting on a recent contribution of a weevil found on Areca catechu on October 30, 1933, L. L. Buchanan, of the National Museum, comments as follows: "This is one of about 20 species of the subfamily Cryptorhynchinae in Mr. Oakley's lot of weevils that cannot be placed generically without first doing more or less revisional work on the group. Due to the pressure of other duties it seems impossible to find time (for the present at least) to give this very interesting collection the necessary careful study, and the species therefore must be left as merely Cryptorhynchines. It is hoped that more definite names can be supplied later, but whether or not there will be an opportunity to do this some mention should be made of the unusually high quality of material submitted by Mr. Oakley during the past year or more. The specimens are in fine condition, carefully labeled, and include many new and little-known species. When properly worked up this material will give an entirely new picture of the Puerto Rican weevil fauna."

INFESTED ORANGES SMUGGLED ACROSS THE RIO GRANDE

The Mexican border quarantine station at Roma, Tex., reports a typical case of fruit smuggling which is illustrative in simple fashion of the whole quarantine

problem. Mounted customs officers on patrol about 20 miles above Roma detected several persons in the act of smuggling oranges across the river from Mexico. On being apprehended the smugglers abandoned their sack of fruit and swam back across the river. In the sack were 70 oranges which when examined by the plant quarantine inspector at Roma disclosed four fruit-fly larvae, later identified as Anastrepha ludens. The biological danger in this case is clear enough, and with it the need for restrictions on entry. But the case also provides a typical illustration of the universal elements of human ignorance and willful disregard for the public welfare necessitating constant vigilance.

LUMBER CARRIES ELM BARK BEETLE

When the Dutch Elm Disease Quarantine, No. 70, was being considered there was some discussion of the possibility that the elm bark beetles, Scolytus spp., might be carried in bark attached to the edges of lumber, crates, etc., and the quarantine was drawn to exclude such materials if bark was present. That this action was timely and correct is well exemplified by a recent report from the New Orleans inspection station. A foreign ship entered that port December 11, 1933, carrying about 500 elm boards as dunnage. About half of them had bark on the edges and nearly all showed the work of scolytid beetles. From the bark of five of these boards 9 living larvae and 2 pupae were taken, and these proved on identification to be Scolytus scolytus, the insect regarded in Europe as the chief instrument in spreading the Dutch elm disease. Although another scolytid, S. multistriatus, is present in the Northeastern States and is believed to play a prominent part in the spread of the Dutch elm disease, Scolytus scolytus has not yet been reported from this country. Its interception in this case must therefore be regarded as a double blessing.

INSPECTORS TRANSFERRED AT GULF AND MEXICAN BORDER PORTS

The following transfers were made in the plant quarantine inspection force at Gulf and Mexican border ports, effective January 1, 1934: L. R. Dorland from Galveston, Tex., to Mercedes, Tex.; L. A. Frost from Mercedes, Tex., to Port Arthur, Tex.; C. P. Trotter from Port Arthur, Tex., to Galveston, Tex.

DOMESTIC PLANT QUARANTINES

The circular entitled, "Synopsis of Federal Plant Quarantines Affecting Interstate Shipments", formerly issued as mimeographed Circular 33-T, has been revised to include quarantine regulations in effect on January 1, 1934, and is being printed as a pocket-size booklet for ready reference. It is now designated Miscellaneous Publication No. 189. The circular consists of (1) a summary of the regulations giving the shipping requirements of the various quarantines; (2) a list of the articles under restriction; and (3) post offices in the areas regulated under the various quarantines, listed by States as heretofore. The new circular will probably not be available for distribution for several weeks.

A summary of both Federal and State quarantines which is compiled by the Western Trunk Line Committee, of Chicago, for information of express and freight agents, was also recently brought up to date by the committee for reprinting as Circular 5-G.

During the year 1933 the States of Idaho, Georgia, and Wyoming discontinued terminal inspection of parcel-post shipments of plants and plant products.

According to the Bureau of Plant Industry, a considerable number of trees infected with the Dutch elm disease have been found in native woods west of Newark, N. J. It has been found practicable to make surveys for this disease during the winter months and a large number of men are employed in this work under an allotment from the Federal Civil Works Administration.

TRANSIT INSPECTION

An intensive survey of wholesale freight shipments of nursery stock into and through Chicago is being made by transit inspectors of that city under rearranged tours beginning the second week in January. By covering the truck shipments at all break-bulk points as well as shipments held at cold storage plants and trucking transfer stations, it is hoped to obtain more complete information of the winter movement of nursery stock. Chicago freight depots are widely scattered and it is expected that inspection will be concentrated principally upon about 12 of the more important ones. The cooperation of transportation agencies in telephoning the inspectors regarding plant consignments listed on the waybills is of invaluable assistance in securing a check on such shipments for compliance with the regulations.

Studies of the winter movement of nursery stock throughout the United States, based on figures obtained in 1931 and 1932 from officials of class I railroads, show that 97 LCL transfer points handled an average of 50 or more cars a day. These transfer points are located in 33 different States. Those States which have 4 or more such points are:

Georgia-----	4
Illinois-----	4
Indiana-----	4
Iowa-----	8
Massachusetts-----	4
New Jersey-----	4
New York-----	12
Ohio-----	5
Pennsylvania-----	8

A list of the 97 transfer points is being prepared for the information of the inspectors.

The checking of mail, express, and freight at Pittsburgh to be sure of compliance with the Japanese beetle quarantine regulations, was discontinued for the winter in December.

Transit inspectors at Jacksonville, Fla., formerly located in the old post

office building, are now occupying Rooms 441 and 445 in the new post office building. Both foreign and domestic shipments are checked by the three inspectors, for compliance with State and Federal regulations, and nursery stock is inspected for insect pests and plant diseases under the provisions of the terminal inspection law. The schedules include the examination of waybills frequently totalling a thousand or more a day.

NARCISSUS BULB PESTS

A general summary of the narcissus inspections in the United States is being compiled from the reports submitted by the various State inspectors covering the work of 1933.

DATE SCALE ERADICATION

Inspection during the month of December in the Coachella Valley was about equally divided between the infested area and the adjoining territory. In the infested area ladders were used in most plantings while in the adjoining territory ground work only was done.

A crew from the Coachella Valley assisted the Imperial Valley inspectors in inspecting three large plantings. One single scale was found in the Reed Garden. A rather heavily infested palm was found in this garden in July of this year during an inspection from the ground. A few scales were found on an offshoot at the base of the palm. Ladders were then used and considerable scale found in the upper part of the palm. The palm was defoliated and sprayed.

In September the Imperial Valley inspectors carefully inspected a small area around this palm and found four lightly infested palms. In October and again in December a Coachella Valley crew inspected the garden and each time only single scales were found. The infested palms in this planting are the only ones found during the present fiscal year.

During the month inspection of standard variety palms was carried on in the Salt River Valley in Arizona. As most of these palms originated in the Coachella Valley, some from gardens which later showed scale, there is a chance that there are some infestations behind the fiber which have not yet spread to the foliage.

JAPANESE BEETLE AND EUROPEAN CORN BORER

Exclusive Japanese Beetle Work

Federal Projects 3, 4, 5, and 6 were completed during or shortly after the third quarter of 1933. An allotment of \$7,400 was made for F.P. 3, a project involving repairs to the main roof, fire walls, skylights, and skylight flashings on five of the six bays of Warehouse No. 4, assigned for project use at the New Cumberland General Depot of the U.S. Army. This work was let on contract to the lowest bidder, a Philadelphia contractor. Work began on November 17 and was completed January 4. It was necessary to practically reconstruct the skylights, since water seepage had rotted the woodwork beneath the flashings. F.P. 4 involved resurfacing of the roadway from the property line of the U.S. Army Depot to Warehouse No. 4. This work was carried on from September 26 to October 11 under an allotment of \$2,500. Coal tar and crushed stone screenings were used in the resurfacing operation. Twelve laborers were given work under this project. In F.P. 5, \$2,000 was allotted for reconstruction of approximately 850 linear feet of a 12-foot-wide concrete loading platform along the railroad spur at the side of Warehouse No. 4. After the slabs or squares of concrete forming the top of the platform base had been removed, it was found that the cinder base had settled considerably below the top of the cement wall forming the side of the platform. In reconstructing the platform it was first necessary to fill in the base of the platform and roll the fill till firmed. Reinforcing fabric was used to strengthen the new concrete work. A 2-bag concrete mixer was used to prepare the mix. Eight laborers were employed from September 21 to November 24 in completing the work on the platform. A private contractor from Washington, D.C., was the low bidder on F.P. 6 for reconstruction of the large service door at the storage warehouse. This project was financed by an allotment of \$200. Work on the service door was completed on November 17. All men engaged on the projects utilizing local labor were residents of York County, in which the Army Depot is located. The laborers were paid from NRA funds. These projects began shortly after the organization of the State Reemployment Service for the administration of allotted NRA funds. In the absence of a State Reemployment Committee in York County, arrangements for employment of the men used on F.P.'s. 4 and 5 were completed through John McCune, Jr., State Reemployment Director in Harrisburg. On these projects, the men worked the customary 6 hours per day for 5 days a week, and were paid at the rate of 50¢ per hour.

Territory which it was necessary to place under regulation as a result of this year's discovered infestations is the least of any year since 1929. Only twice in the past 10 years have the added sections been so limited in extent. This season's added territory of only 1,689 square miles brings the total regulated zone to 99,379 square miles. In Maine, the section placed under regulation includes sufficient territory to make a continuous area from the New Hampshire line to and including the city of Portland. This will permit unrestricted movement of the considerable amount of produce that annually moves from Boston to Portland via truck. Waterville, Maine, was included as an isolated regulated zone. In Maryland, certain territory within the established boundaries of the Washington Suburban Sanitary District was added to bring under regulation a number of infestations in localities suburban to the District of Columbia. Through one Maryland election

district the area includes only the right of way of U.S. Highway No. 1. This will allow movement of uncertified stock over the highway without the customary permit requirement. Coincident with inclusion of the town of Keyser, W.Va., sufficient Maryland territory was added to form a continuous strip from the previously regulated territory in the Cumberland district to the West Virginia line adjacent to Keyser. One West Virginia township south of Cumberland also was added to concentrate traffic from Cumberland into a single highway instead of the two means of egress which this year required guarding. An additional magisterial district in Henrico County, Va., was added for the purpose of including an infested nursery in that subdivision. All of Norfolk County, Va., was taken under regulation. The latter addition will assist in guarding south-bound roads by moving the quarantine boundary to a point where there are but two exit highways. By the inclusion of two towns in Cattaraugus County, N.Y., a small area was added to connect this infested locality with the main regulated zone in Pennsylvania.

→ Waterville

Other than extension of the regulated territory, there were few important changes in the twelfth revision of the Japanese beetle quarantine regulations, effective December 1, 1933. With the addition of a single magisterial district in Henrico County, Va., to the previously isolated regulated section comprising the city of Richmond, and the creation of another isolated section by the addition of the city of ~~Portland~~, Maine, the regulated territory from which quarantined fruits and vegetables may be shipped without certification and to which similar articles may not be moved without certification from the remainder of the regulated territory, was extended to include these two isolated sections. For the purpose of permitting movement without certification of thousands of samples of imported peat shipped from the metropolitan district of New York and of similar material when used as packing for exempted bulbs, corms, and tubers, "ground, dried, imported peat in packages of 5 pounds or less to the package" was added to the list of articles exempted from the certification requirements. In order to clarify the regulation exempting from certification between October 16 and June 14 certain aquatic plants, the term "fish grass" was replaced with "parts of submerged aquatic plants without roots." In horticultural literature the term fish grass is usually restricted to Cabomba, although a number of types of submerged aquatic plants used for oxygenating purposes in aquariums equally are entitled to exemption on the basis of their growth wholly below water and their shipment without roots. Under the rewording of this provision, the exemption will include such aquatics as Anacharis (Elodea), Cabomba, milfoil (Myriophyllum), Sagittaria sinensis, S. subulata, and Vallisneria. To relieve situations arising when less-than-carload shipments of quarantined articles, such as bags of sand or marl for filtration purposes, are involved, provision was made that "in the case of lot shipments by freight, one certificate attached to one of the containers and another certificate attached to the waybill will be sufficient." This eliminates the provision necessitating the attachment of an individual certificate to each container in a less-than-carload shipment. The regulation reading "In the case of bulk shipment by road vehicle, the certificates shall accompany the vehicle" was changed by the omission of the word "bulk." This now conforms to preferred practice by which certificates accompany the vehicle in the case of small lots of quarantined articles moving by automobile, as well as in the case of movement via commercial truck.

Persistence of lead arsenate in the soil at isolated infestations poisoned for one or more seasons since 1929 was determined this fall through analyses of soil

samples from six widely separated cities. Single blocks in the treated cities were arbitrarily selected from maps of the poisoned sections, and these designations, together with the history of the treatments, submitted to the technological division with the request that analyses of the soil therein be made. Samples of soil in Richmond, Va., to which was applied 500 pounds of lead arsenate per acre in November 1931, showed an apparent total persistence of the insecticide in the soil. Samples analyzed from Providence, R.I., disclosed the least residuum of lead arsenate. In the latter city, spring treatments in 1930 and 1931 totalled 700 pounds per acre. The 1933 analyses showed the presence of 377 pounds per acre. A section in Hartford, Conn., which had been poisoned in the springs of 1930 and 1931, showed a residue of the insecticide almost equal to the total dosage of 650 pounds per acre applied in the 2 years. Similar results were obtained from the samples dug in Erie, Pa., and Springfield, Mass. In Erie, fall applications of 500 pounds per acre each in 1931 and 1932 showed up in approximately full content this year. Spring treatments in 1929, 1930, and 1931 at Springfield, Mass., totaling 646 pounds of poison, were shown by analyses to persist at the original dosage. Samples from a block successively treated during 1929, 1930, and 1931 at Sayre, Pa. with a total dosage of 678 pounds per acre, showed a residue of the poison close to the 3 years' dosages.

Final collection of bait dispenser cages distributed in Laurel, Elkton, and Colgate, Md., was made from December 4 to 12. Originally 1,400 cages were distributed in each community. Preliminary collections had been made early in September of cages that were not hidden by foliage. Little difficulty was experienced in final gathering of cages in the residential section of Laurel. At the Ricketts Mill infestation on the outskirts of Elkton, about three fourths of the cages had been set in trees and shrubs along the banks of Elk Creek. A heavy flood in the creek late in August washed away many of the cages. As many as 4 and 5 cages were dug out from piles of driftwood washed up on the banks by the flood. One Japanese beetle trap, which had been overlooked by the collecting inspector because of a dense growth of blackberry bushes, was found filled with mud washed in during the flood. Surrounding trees showed the water to have been full 18 inches higher than the trap, which was itself 4 feet from the ground. The infested section at Colgate is more or less open country. Here collections were difficult even in the absence of foliage. A 6-inch snow added to the difficulties. Cages placed in the foliage on the sides of a mound covering a sewer line fared rather badly as a result of their use as targets by boys with 22 caliber rifles. Approximately 50 cages had been set along the mound. Boys gathered some 30 of these, removed the glass containers of liquid bait, and lined up the perforated cages on top of the mound as targets. Plenty of additional perforations in the cages gave evidence of the boys' marksmanship. Only 10 of the cages in this immediate section were worth recovery.

Although New Jersey inspectors made 80 fewer inspections during December than in November, only about 50,000 fewer plants were certified. Over a quarter of a million plants were certified in New Jersey for movement to nonregulated territory, and some 120,000 were certified for movement to classified dealers within the area. Digging of field-grown roses, freeing them from soil, and their storage in certified houses was about completed during December. Since the past season's scouting activities in North Jersey disclosed infestations in a number of

additional nurseries and greenhouses, demands have considerably increased for the services of inspectors to examine stock requiring certification. Dahlia tubers were shipped in considerable quantities from South Jersey during December. About the middle of January it is anticipated that dahlia growers will begin placing their tubers in greenhouses for propagating purposes. One inspector is kept busy attending to inspection calls on the New Jersey coast. Removal of the upper 12 inches of soil from fields or pits where molding sand is dug under certified conditions was completed during December. Shipments of roots of bleeding heart and spirea will start the latter part of January. Certified shipments from New Jersey to noninfested territory during December as compared to the same month of last year show an increase of approximately 100,000 plants.

F. L. O'Rourke, junior plant quarantine inspector, stationed at the Baltimore Japanese beetle quarantine office, had an exciting experience when on the morning of December 11 he was blown across Chesapeake Bay in a 14-foot rowboat. Mr. O'Rourke, while on annual leave, boarded his boat at the mouth of the Bush River for the purpose of proceeding 200 yards across the stream to a duck blind where he intended to hunt. While in the stream, a sudden squall caught the boat and it was impossible to row or even guide the boat with the oars. The small craft was soon blown into the bay. To add to the dilemma, the boat sprang a leak. A length of cord was the only thing available with which to plug the leak, but this was ineffective. A pasteboard cartridge box first was used to bail out the water but this soon became useless. Mr. O'Rourke then drank some hot coffee he had in a thermos bottle and used the bottle as a bail. Several large boats failed to observe Mr. O'Rourke's distress signals. The boat was adrift for 4 hours before it finally landed at Wharton's Point on the Eastern Shore of Maryland, 9 miles from the starting point. As the boat reached shallow water, a large wave swamped it and Mr. O'Rourke was forced to wade ashore. At a nearby house he dried his clothes and secured some warm food. Natives on the Eastern Shore asserted that a small boat could not weather the storm which Mr. O'Rourke survived. Fortunately Mr. O'Rourke has suffered no ill effects from his 4-hour exposure and final dousing.

Reconstruction and reconditioning of some 30 Federal high-pressure sprayer trucks is now in progress at the New Cumberland garage. This work began on September 20, and will probably extend for several months into 1934. There are 14 mechanics and 3 laborers now employed on the sprayers. These tank trucks are to be used by the gypsy moth control unit. They were brought to New Cumberland from the control area of Luzerne and Lackawanna Counties, Pa. Mechanics receive \$1.20 per hour and unskilled laborers 50¢ per hour for a 30-hour week. All are paid from NRA funds. In addition to the work on the Federal pumpers, 100 light trucks with pick-up bodies were repaired, repainted, and transferred to the gypsy moth project. This work began on September 29 and was completed by the end of December. At the peak of the work 16 mechanics and 9 unskilled laborers were employed in getting out the 100 machines. Most of the light trucks were driven to Greenfield, Mass., while a few were delivered to the gypsy moth control project at Wilkes-Barre, Pa.

Under the prevailing moderate weather conditions, nursery stock continued to move from the Philadelphia district until December 9. Weather conditions also were favorable for digging of stock and its storage for spring shipment. The temperature in Philadelphia on November 30, Thanksgiving Day, was 73° F. The most active

shippers from the Philadelphia territory late in December were the wholesale seed houses and the pansy growers. Occasional shipments of plants free from soil were certified for private individuals and several nurseries. Most greenhouses reported a good trade in decorative plants for Christmas.

Visits by inspectors connected with the Baltimore district office were made during December to all important nurseries, greenhouses, post offices, and freight and railway express offices in the newly regulated portion of Allegany County in western Maryland, and in the recently added Maryland regulated section adjacent to the District of Columbia. The survey was also extended to the very limited section of Mineral County, W.Va., embraced within regulated territory with the extension effective December 1, 1933. The quarantine regulations were explained to the firms and individuals interviewed and they were furnished with copies of the new regulations.

First copies of a 40-page mimeographed Japanese Beetle Shipper's Guide were available on December 9. Distribution of the guides to classified dealers, occasional shippers, postmasters, and agents of common carriers within the regulated area began as soon as quantities of the publication were available. Kraft envelopes were addressed on an addressing machine fed with the stenciled names and addresses of approximately 15,000 firms and individuals in 13 States and the District of Columbia on the project's mailing list. Distribution of the guides to practically the entire mailing list was accomplished by the end of December.

The territory in the State of Maine brought under regulation, effective December 1, has been placed under supervision of the Boston district office. Certification of quarantined articles moving from the small portion of Mineral County, W.Va., added to the restricted zone in the vicinity of Cumberland, Md., will be granted by inspectors under the supervision of the Baltimore district office. The small addition to the regulated zone in Cattaraugus County, N.Y., comes under the jurisdiction of the Syracuse district office, while the slightly extended Henrico County, Va., area is added to the section served by the Richmond district office.

Investigation of a violation intercepted on October 26 by a transit inspector in Omaha, Nebr., involving the mailing of a wooden box filled with uncertified peat used as packing for a bottle labeled "rum", disclosed that the shipper had apparently inserted a false return address on the package. The box was en route in the mails from Philadelphia to Alliance, Nebr. After its interception the contents of the shipment were confiscated by the Post Office Department as unmailable matter and the peat packing was returned to the address given by the consignor.

Seven New Jersey State inspectors furloughed from Japanese beetle work have secured temporary positions with the Dutch elm tree disease control project. Although no definite date is set for completion of the work on this new control project, it is anticipated that it will terminate by the middle of February, at which time available funds may permit reemployment of the men in their regular capacity.

Corn Borer Certification Activities

Redivision of Federal corn borer certification work in New Jersey has been effected. Starting December 1, territory in New Jersey was subdivided into northern and southern divisions. Corn borer inspection service, both Federal and State, south of a line connecting Phillipsburg and Perth Amboy will be rendered by State inspectors under the supervision of G. K. Handle, district supervisor of Japanese beetle quarantine work in New Jersey. H. V. Hotchkin, who formerly supplied all Federal corn borer certification in New Jersey, will perform this service in the northern section of the State and will also handle similar inspection work on Long Island.

Federal corn borer inspectors certified a total of 222 shipments for movement from formerly quarantined territory into noninfested States. The majority of the inspections were made in the States of Massachusetts, Connecticut, and New Hampshire.

MEXICAN FRUIT FLY

The activities of the fruit fly project were devoted throughout the month principally to the operation of some 5,156 glass traps in 455 selected groves throughout the Valley. The operation of these traps resulted in the taking of specimens of Anastrepha ludens, A. fraterculus, A. serpentina, A. striata, A. pallens, and Toxotrypana curvicauda. Ludens were taken in 10 groves in 6 districts. In no grove was more than 1 ludens taken during the month. In most of the groves in which ludens were taken, traps had been operated approximately 3 months with negative results so far as ludens were concerned.

So far as is known, the adult A. striata taken on the 14th of the month is the first of this species ever taken in the continental United States. Larvae of this species are taken frequently from guavas shipped from the interior of Mexico to the Mexican border cities.

With the advent of cooler weather it was found that the attractant used in the traps was effective for at least 3 or 4 days. It was also found that a bait using only one half the amount of malt which had previously been used was apparently as effective as the old mixture. Accordingly, instructions were issued to the inspectors to run the traps twice weekly, rather than at 2-day intervals, and to use only half the malt previously used in preparing the bait. This resulted in a considerable saving without impairing the effectiveness of the trapping operations.

Arrangements were made by the State Department of Agriculture to purchase a power sprayer of 50-gallon capacity for use in spraying the groves in which ludens were taken. These are usually taken in the largest trees in the Valley in which it is practically impossible to get a good coverage of the nicotine spray with hand guns. It was expected that this machine would be ready for operation during the first days of January.

Close inspection of the fruit remaining in groves in which ludens were taken gave negative results insofar as larvae of Anastrepha were concerned.

Fruit importations into Matamoros were considerably less in December than in November. New rates became effective on the National de Mexico during the first days of January, increasing freight charges about half, and an immediate decrease in the shipments of fruit into Matamoros was observed. Only two cars of oranges were received from Montemorelos, compared to eight received in November. Some 4,000 spoiled fruits were collected from the fruit stands during the month from which 120 larvae of ludens were recovered from oranges, and 2 of striata from guavas. The operation of 157 traps in Matamoros resulted in the taking of 4 adult ludens. The trees on the premises in which these flies were taken were immediately sprayed with nicotine-molasses.

More fruit was shipped during the month of December than during the whole of the preceding harvesting period. It was estimated that around 40 to 50 percent of the crop had been moved by the end of the month. For the first month this season the shipments by rail exceeded those by truck. Truck shipments were particularly heavy for several days near the middle of the month; on the 12th, 110 trucks carrying fruit were passed by the Falfurrias road station. During the month 409 master permits were issued to truckers moving fruit to 16 different States.

PINK BOLLWORM

Field inspections have been continued in the Western Extension counties of Texas throughout the month. Since the last News Letter was issued infestation has been found in Terry County. This leaves only 4 counties--Bailey, Cochran, Dawson, and Hockley--in which gin-trash findings have not been traced to the fields. In Dawson County the records at the gin, where a specimen was found in trash, have been gone over in an effort to obtain information which would help in tracing the infestation to the field. Apparently, all but 20 fields were eliminated, and inspections are now being concentrated in these fields.

Effective December 23, the pink bollworm quarantine was revised, whereby the counties involved in the Western Extension findings were placed under regulation. This included all of 2 counties in New Mexico, 5 in Texas, and parts of 3 others in Texas. Since the first specimens were found the movement of various products has been controlled through cooperation with the ginners and others involved. Therefore, the placing of this area under regulation has resulted in very little change in the method of handling products, and has caused practically no comment.

The above revision of the pink bollworm quarantine also released from regulation the counties of Maricopa and Pinal in Arizona. Continued gin-trash inspection in the Salt River Valley had failed to reveal any signs of the pink bollworm. It will be recalled that the initial infestation was found in October 1929 in gin trash, and was traced to a field 5 miles east of Gilbert, in the extreme

eastern end of the cultivated area. Some 3,000 to 5,000 acres in this particular area were found to be heavily infested, from 50 to 75 percent of the green bolls remaining in the field containing live pink bollworms. The infestation gradually decreased in intensity from this point, and when finally delimited was found to extend about 10 miles into the cultivated area, involving approximately 40,000 acres of cotton.

In past years the cotton acreage was around 144,000, with an annual production of about 100,000 bales. The soil is especially fertile, being watered largely from the Roosevelt Dam reservoir, located about 65 miles above Phoenix on the Salt River. The cultivated area begins about 25 miles east of Phoenix and extends about 40 miles west, the average width being perhaps 20 miles. The altitude is around 1,000 feet, with a subtropical climate, thus making conditions almost ideal for the pink bollworm.

The area was placed under regulation on October 31, 1929. Sterilization and fumigation machinery was installed within about 30 days, and the remainder of the 1929 crop was treated. A noncotton zone was established in the spring, extending 2 miles beyond the outermost known infested sections, and after picking was completed all fields in the noncotton zone, amounting to approximately 47,000 acres, were cleaned. It is customary to grow cotton from stubs for 4 or 5 years without replanting, and a large part of the acreage cleaned sprouted a good stand of stub cotton, which also had to be destroyed. The noncotton zone was maintained during the 1930 crop season. Field and gin-trash inspections were carried on in the remainder of the valley, and as a result it was found that the infestation was more widespread than was at first thought. In view of this situation it did not seem practicable to maintain the noncotton zones during the 1931 crop season. Consequently, the State authorities established regulated areas where infestations had been found, and in these areas it was required that the fields be thoroughly cleaned and plowed, no stub or volunteer cotton be allowed to grow, and the planting of the new crop delayed to April 1 for long staple and April 20 for short staple. The cleaning of fields was to be done by individual farmers, but due to their financial condition only 62 percent of the acreage was cleaned. This 62 percent, however, included practically all infested fields and those immediately adjacent.

Inspections during the 1931 season disclosed that very light infestations still existed in two areas; therefore, as part of their relief work, the State of Arizona appropriated money for cleaning the acreage involved, the work being supervised by this Bureau.

Intensive field and gin-trash inspections were carried on during both the 1932 and 1933 crop seasons without any further signs of the insect being found. During these two seasons practically all of the gin trash produced was inspected, and in view of the demonstrated efficiency of the gin-trash machines it would seem that this is conclusive evidence that the infestation has been eradicated. Considering the intensity of the infestation when discovered, and the ideal conditions for the insect in this important cotton-producing area, the successful eradication of the insect is a very outstanding piece of work.

The quarantine was also extended to cover parts of three counties in southern Georgia and an additional county in northern Florida. A party continued field

inspections in Madison County, Fla., during most of the month, but with negative results. The inspection work now consists of the examination of bollie material, 21 bushels having been inspected from Florida and 6 bushels from Georgia, with negative results.

With favorable weather and a plentiful supply of labor the cleaning of cotton fields in the Big Bend of Texas has gone forward without any interruption whatever. At the close of the month 2,330 acres had been cleaned. This includes all of the heaviest infested fields, which were cleaned first, before there was much chance of worms going into the soil. There now remains only a small acreage to be completed.

The cleaning of fields on the Mexican side of the river has also been started. The agricultural inspector at Ojinaga, and the Mexican Consul at Presidion, are taking quite an interest in the work. Many of the leading farmers on this side, who are acquainted with the Mexicans in the settlements opposite their farms, are also cooperating in the cleaning of Mexican fields, and in general considerably more interest is being shown this season than last. It now appears that a fairly good job of field cleaning will be done.

During the month 21 interceptions were made at the Marfa road station, of which 9 were infested. A total of 59 pink bollworms was found, 40 being alive. As the field clean-up has been completed to the extent that there is very little chance of infested material being taken from the Big Bend section, the road station has been discontinued. Since the station began operating the first of September, 49 interceptions have been made. Of this number 20 were infested with the pink bollworm, 122 living and 34 dead specimens being taken.

The eradication of wild cotton in southern Florida has progressed satisfactorily. During the month 17 colonies, covering approximately 15 acres, have been recleaned, from which 45 mature, 3,345 seedling, and 311 sprout plants were removed. When the large number of plants originally removed is taken into consideration, the above results indicate that rapid progress is being made. In addition to recleaning these colonies, the inspectors have been conducting surveys for any new colonies which might have been overlooked. They have been going into places where wild cotton is least likely to occur, but which have to be covered, and only 2 small colonies were found, 1 consisting of only 3 plants. Other parties have been working in areas not previously covered along the mainland bordering Florida Bay and keys in Florida Bay. Out of over 100 keys visited, wild cotton was found growing on 23. It was estimated that around 25,000 plants were growing on the 23 keys. Some 33 colonies were located along the mainland in Collier and Dade Counties. When these surveys are completed we will have a definite knowledge as to the amount of wild cotton yet to be removed and the areas in which it is growing.

During the month the cotton blooms at Chapman Field have been inspected on one day of each week. On the remaining days they are collected and destroyed by the Bureau of Plant Industry. This plan is being followed because of the need for men on other work. No signs of the pink bollworm were found in any of the blooms examined.

PREVENTING SPREAD OF MOTHS

The scouting for gypsy moth infestations has been continued in the highland sections of northern Vermont, western Massachusetts, and northwestern Connecticut. Unusually severe weather, particularly during the last days of December, made such work quite difficult and the amount of snowfall impeded progress. Woodland scouting in winter, particularly in sections of heavy snowfall, can be accomplished only if the men engaged use snowshoes, as otherwise they use up time and energy floundering around and only small progress can be made. Because of the deep snow in the more northern sections many pairs of snowshoes are now in use, about 400 men using them daily. The most severe weather of the month came during the last few days, with heavy snow followed by subzero temperatures which made outdoor working unbearable. However, as many of the men were home for the holidays during that period, they were not exposed to that bad weather. The training school for unexperienced men was continued throughout the month in southeastern Vermont. As the system for training these unexperienced men under skilled instructors consists in learning their duties while performing them, all of the work done is just so much accomplished in gypsy moth control. Men at such training schools in Vermont have scouted 18,000 acres of woodland, 105 miles of roadsides in open country, and about 64,000 scattered trees, and while doing this work have found and destroyed over 27,000 gypsy moth egg clusters.

During December scouting of woodland was continued in five towns in northeastern New York bordering on Lake Champlain. As the total area to be scouted in that section is not large, only a few crews of men have been assigned there. In common with other northern sections where gypsy moth scouting is being done, work in New York was handicapped to some extent by adverse weather conditions. Early in the month snow fell to a depth of about 7 inches, and while this was not sufficient to make travel too difficult, it did interfere with scouting by coating all of the trees and brush in such a manner as to make examination difficult.

In spite of all weather obstacles, progress was made in all three of the New England States and in New York. The work performed during the month brought the total acres of woodland scouted up to about 700,000.

Operations in Pennsylvania continued with the scouting of woodland, the examination of scattered trees along roadsides and river banks, and the cutting out of dead and worthless trees in the more heavily infested sections of the area. The number of crews engaged in scouting varied slightly; at one time 35 crews were thus engaged. The open season for deer hunting in this State began on December 1, and because of that it was necessary to relocate a large percent of the scouting crews. Many had been working in wooded areas containing a large amount of sprout growth and dense underbrush where hunters go in large numbers throughout the season. All of the crews working in such areas were transferred to sections where it was possible to scout with a greater degree of safety.

In the early part of December men engaged in gypsy moth control work at the different C.C.C. camps west of the Connecticut River had been increased slightly in numbers so that 457 were engaged daily in this work. This number was increased

gradually until by the middle of the month the daily average was 515. During the holiday season, however, many of the men were away from the camps on leave and the daily average declined, to mount again after the holidays so that by the beginning of the new year the average was back again to over 500. Continued progress has been made in the scouting and control work, and while not so much was accomplished as would have been possible if the full complement of men were available at all times, there is reason to be gratified at the work done. Thus far men working in towns in the vicinity of the camps have scouted over 88,000 acres of woodland, and during the course of this work have found and destroyed over 51,000 gypsy moth egg clusters.

In the past, from time to time, shipments of second-hand red bricks have been inspected and certified from the gypsy moth quarantined area to points outside. Such shipments were usually small in size, consisting of only a few barrels. For the most part the bricks were to be used in constructing fireplaces in restaurants, and only old bricks which showed considerable signs of having been exposed to smoke, fire, or to the elements were marketable for such purposes. Most of the shipments were made by one firm which obtained its supply from ruined houses or houses which were being dismantled. For fireplace construction only selected bricks were shipped and these were packed carefully to avoid breakage en route. There has been so little demand for such articles during the past year or two that the firm has accumulated a considerable stock which has been piled in the open and which has been exposed to gypsy moth infestation. During December the firm received an order for a large number of bricks to be used partially for the construction of a house being erected in New York and for the construction of a wall around the premises. Two carloads consisting of 37,000 bricks were shipped to destination. Because of the danger of infestation each brick had to be examined individually and the inspection work connected with this shipment extended over quite a number of days. A few gypsy moth egg clusters were found during the course of inspection and these were entirely removed before shipment was certified.

The principal manufacturers of telephone cable reels are located outside of the area quarantined on account of the gypsy and brown-tail moths. Reels loaded with cable are shipped from the manufacturing centers to various destinations inside of the quarantined area, and after having the cable removed for installation, are shipped back to the cable firms. Because of the value of these reels it is not often that they stay in the quarantined area for a sufficient length of time to be exposed to infestation, and even if present during the period when egg clusters are being deposited may not be exposed, because firms handling them have become accustomed to assembling and storing them in yards or buildings well away from infestation prior to shipment. When cables are strung through woodland areas the unloaded reels may remain for a period close to trees and it is for this reason that during inspection some gypsy moth egg clusters may be found. Ordinarily the inspection of such reels, particularly if they have not been exposed to infestation, is not a very lengthy process, as they may be examined without dismantling. When exposed to infestation it becomes necessary to remove one side of the reel so that the inside of the inner drum may be examined, and such removal is often quite difficult as the bolts and nuts may have become rusted through exposure to the elements. Occasionally a shipment of reels is presented for inspection which has been in the field for some time, and such shipments always call for careful inspection. Such

a shipment was inspected recently in New Hampshire, the reels having been in the field for more than a year; inspection of them required 2 full days as they had to be taken apart. One reel was found to be badly infested, 15 egg clusters being removed.

A few years ago when all nurseries were very active in selling stock, particularly various species of evergreen trees for foundation planting around new houses, numerous nurseries planted extensive acreages of the different species most in demand in anticipation of a continued active selling. With the decrease in business they have found that they are considerably over-stocked in such trees and they are adopting all sorts of methods for the disposal of the extra stock. In many cases these trees have been planted quite close together in rows and in consequence many of them are now growing too thickly for the production of specimen trees. Extensive transplanting is necessary and most of the nurseries do not have funds available for such work. During the past season, particularly toward the end, there has been considerable shipping of evergreen trees from nurseries to other than the usual type of customer. One firm made arrangements with a maple candy manufacturing firm to ship a small growing tree with each package of candy. The candy orders were shipped direct from the manufacturing company; then a list of customers was sent to the nursery where the trees were dug, inspected, wrapped individually, and shipped direct to the candy purchasers. Such orders increased the volume of shipping for that particular nursery to quite a considerable extent. Another nursery, through arrangements with a New York newspaper which solicited contributions for a "Christmas fund", agreed to supply a living evergreen tree to every person who contributed at least two dollars. Because of the fact that the fund closed just prior to Christmas, digging difficulties were anticipated and a considerable number of trees were dug prior to severe freezing and placed in a protected shed where they could be obtained easily at shipping time. In some sections nurserymen cut evergreen trees growing in their nursery rows and sold them for Christmas trees. This was the first year that any considerable number of such trees were handled in this way, as, of course, the amount received for each tree was far less than could be obtained in normal seasons for the tree with roots. Somewhat over 7,000 small evergreen trees cut in a nursery were shipped from one section of Connecticut.

The inspection of Christmas trees this year has been handicapped to a considerable extent by the extremely inclement weather in some of the cutting sections. Early in the season there was considerable cold weather and snow which, coming as it did when the operators were cutting trees, hampered this cutting considerably and delayed the transporting of the trees from the cutting lots to the assembling points at the various freight stations. The abundance of snow interfered to quite an extent with the transfer of trees from the lots where they were cut and also hampered inspection considerably. Bundles of trees at the assembling points are thrown into piles and if much snow falls over these piles it makes inspection extremely difficult, particularly if there is alternating thawing and freezing which binds bundles together. During the latter part of December in the Christmas tree territory in Maine, New Hampshire, and Vermont there was severely cold weather with quite a few carloads of trees remaining to be inspected. Travel for the inspectors was decidedly dangerous as the roads were covered with ice and snow. In spite of the handicap imposed by bad weather, satisfactory progress in the inspection of trees was made, and it was possible for the operators to get all of their

shipments away in time to reach the markets for Christmas. At several shipping points in Vermont near the Canadian line a considerable number of trees, which originated in Canada, were shipped from Vermont points. Due to the scarcity of balsam trees in Vermont some of the operators cut such trees in sections of Canada quite close to the United States line. In many cases such trees are shipped from points in the United States because of lack of railroad facilities near where the trees are cut. The United States duty on Canadian trees has been reduced from 5¢ to 4 $\frac{1}{2}$ ¢ per bundle, and this reduction is quite a saving for operators who handle a considerable number of Canadian trees.

The inspection of all types of Christmas greenery has progressed about as usual this year. Beginning in the latter part of October manufacturers of Christmas wreaths, roping, set pieces, etc., began to assemble stock for use in the preparation of such pieces. As the season advances, more and more stock is collected, being taken to some of the larger plants by the ton. As it is impossible to inspect the stock in the finished piece, all materials are examined immediately after being transported from the areas where cut to the manufacturing plants. In size these manufacturing plants vary from those which make and sell thousands of pieces, to homes where only a dozen or two wreaths may be made for the purpose of obtaining a little extra money at Christmas time. There is a multiplicity of designs for Christmas pieces, with wreaths being the most popular. The wreaths may vary from the simple ones composed only of laurel, to large ones several feet in diameter made up of numerous types of evergreens, cones, and red berries. Center-pieces and table decorations, sprays, roping of different kinds, baskets, and in fact almost every type of piece imaginable, is made by the more progressive firms. This year one firm made large crosses some of which were 5 feet high which were intended for placing in cemetery lots.

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